

**Notice of Allowability**

Application No.

10/026,532

Examiner

Cynthia Britt

Applicant(s)

NAGAMINE ET AL.

Art Unit

2138

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/28/05.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

*Albert Decady*  
ALBERT DECADY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

### **REASONS FOR ALLOWANCE**

Claims 1-14 are allowable over the prior arts of record.

The following is an examiner's statement of reasons for allowance:

The present invention pertains to a test circuit for an integrated circuit that measures an AC characteristic of each of input and output terminals of an integrated circuit. The claimed invention recites features such as "...a plurality of flip-flops, each flip-flop having an input terminal and an output terminal, said flip-flops being arranged in a matrix having  $n$  stages, each stage comprising  $m$  flip-flops, a like plurality of logic gates, each logic gate having an output terminal connected to an input terminal of a respective one of said plurality of flip-flops, and means forming a scan path serially connecting said plurality of flip-flops through the respective logic gates, to propagate a test pattern applied to the input terminal of one of said plurality of serially connected flip-flops, wherein: the test pattern is used to measure an alternating current characteristic of the input terminal of said logical integrated circuit, and said scan path connects the output terminal of the flip-flop located at an end of the first stage with the scan output terminal of said logical integrated circuit."

The prior arts of record teach (Whetsel, U.S. Patent No. 6,199,182 as an example of such prior arts) each array consists of a plurality of rows, each row including a plurality of die. The scan path connects the first die of each row to the second die of that row, and that die is connected to the next die of the row, which is connected to the

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next die of the row, etc., continuing to the last die of the row which is connected to the first die of the next row. The scan path continues in the same manner to the last row, the last die of which is connected to an output terminal.

The prior arts however, do not teach the various claimed connections of the final stages and the initial stages of the input and output scan paths. The advantages of these specific connections are that the claimed scan paths permit faster testing, as set forth in the specification (page 18, line 24 to page 19, line 7). As such, modification of the prior art of record can only be motivated by hindsight reasoning, or by changing the intended use and function of the prior art themselves. Therefore, it is not clear that one of ordinary skill in the art at the time of the invention would have made the necessary modifications to the prior art of record to encompass the limitations set forth in the present application. Moreover, none of the prior arts of record, taken either alone or in combination, anticipate nor render obvious the claimed inventions. Hence, claims 1-14 are allowable over the prior arts of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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